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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/673,235	12/01/2000	Masaaki Ishida	P100725-0017	9089

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EXAMINER
IP, SIKYIN

ART UNIT	PAPER NUMBER
1742	8

DATE MAILED: 10/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	Examiner	Group Art Unit	

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Peri d for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication .
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

☑ Responsive to communication(s) filed on 7/29/02.

☑ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 1 1; 453 O.G. 213.

Disp sition of Claims

☑ Claim(s) 1 – 15 is/are pending in the application.

Of the above claim(s) 8-13 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☑ Claim(s) 1-7, 14, 15 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 11 9(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 1 7.2(a)).

*Certified copies not received: _____.

Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Refer nce(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other _____

Office Action Summary

DETAILED ACTION

Election/Restriction

1. Applicant's election with traverse of Group I, claims 1-7, in Paper No. 7, filed July 29, 2002 is acknowledged. The traversal is on the ground(s) as set forth in pages 8-9 of the instant remarks. This is not found persuasive because claim 1 is obvious in view of cited references of record accordingly the special technical features linking the two groups does not provide a contribution over the prior art and no single inventive concept exists.

The requirement is still deemed proper and is therefore made FINAL.

2. This application contains claims 8-13 are drawn to an invention nonelected with traverse in Paper No. 7. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 15 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to

reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

5. There is no support for the expression "mean diameter of all particles of 65 μm or less" in the specification as originally filed. Applicant is reminded that when amendment and/or revision is required, applicant should therefore specifically point out the support for any amendments made to the disclosure. See 37 C.F.R. § 1.121.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-2, 5, 6, 14, and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 1 is indefinite because the antecedent basis of the expression "the iron matrix" in step (c), line 8 is unclear. Furthermore, the "step (c)" should be read "step (C)" to consistent with steps (A) and (B).

9. Claim 2 is indefinite because the antecedent basis of the expression "the iron matrix" in step (A), line 7 and step (D), line 8 is unclear.

10. Claims 5 and 6 are indefinite because a broad range or limitation (a mean diameter of all particles of 80 μm or less) in line 2 of said claims together with a narrow range or limitation (mean diameter of all particles: 65 μm or less) that falls

within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961), *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948), and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

Claim Rejections - 35 USC § 103

11. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 1-7, 14, and 15 are rejected under 35 U.S.C. § 103 as being unpatentable over JP 07214216 or USP 5665179 to Izawa et al in view of USP

5816088 to Yamada et al and further teaching of JP 08053711.

14. The JP 07214216 and Izawa et al reference(s) disclose(s) the features including nitriding spring steel and two stages shot peening. The features relied upon described above can be found in the reference(s) at: JP 07214216 (abstract) and Izawa et al (Figures 1-4 and col. 4, lines 10-53). The difference between the reference(s) and the claims are as follows: JP 07214216 does not disclose the detail of shot peening conditions and Izawa et al use shots bigger than the claimed in second stage peening. Both references silent about keeping the impact temperature below recrystallization temperature. However, Yamada et al in col. 2, lines 37-61 disclose(s) finer particles of hard metal would increase yield strength and maintain smoother surface roughness. Optimization of a variable recognized in the art as a result-effective variable normally is considered to be within the ordinary skill of the art. See In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). Keeping the impact temperature below recrystallization temperature could help dislocation anchoring. Therefore, it would have been obvious to one having ordinary skill in the art of the cited references at the time the invention was made to use finer shots in second peening stage and maintain the impact temperature below recrystallization temperature as taught by Yamada in order to improve the surface roughness and dislocation anchoring (col. 2, lines 62-67). In re Venner, 120 USPQ 193 (CCPA

1958), In re LaVerne, et al., 108 USPQ 335, and In re Aller, et al., 105 USPQ 233.

15. JP 08053711 is cited to show nitridation could be done after shot peening. It is well settled that merely reversing the order of the steps of a multi-step process does not impart patentability when no unexpected results is obtained. Ex parte Rubin, 128 USPQ 440 (PPOBA 1959) and Cohn v. Comr. Pats., (DCDC 1966) 251 F Supp 378, 148 USPQ 486.

Response to Arguments

16. Applicant's arguments filed July 29, 2002 have been fully considered but they are not persuasive.

17. Applicants argue that Izawa in second stage peening uses larger shot than the claim invention. But, Yamada et al in col. 2, lines 37-61 disclose(s) finer particles of hard metal would increase yield strength and maintain smoother surface roughness. Therefore, optimization of a variable recognized in the art as a result-effective variable normally is considered to be within the ordinary skill of the art. See In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). Furthermore, as is evinced by instant claim 2 that the shot sizes in claimed stages are not critical because the spring could be peened with finer shots then larger shots.

18. Applicants argue that Izawa does not teach to control the temperature rise

during shot peening and use finer shot size in second shot peening. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

19. Applicants argue that Izawa does not disclose the claimed shot velocity. But, Izawa in col. 4, lines 31-35 discloses shot velocity ranging from 70-100 m/s. Further, in Figures 1-4, Izawa discloses shot/projection speed Vs. different properties. Therefore, optimization of a variable recognized in the art as a result-effective variable normally is considered to be within the ordinary skill of the art. See In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).

20. Applicants argue that Yamada is directed to shot peening nitrated spring material. It has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Yamada teaches to surface treatment of a spring material by shot peening in order to improve the fatigue resistance.

21. Applicants' argument with respect to JP '711 is noted. But, JP '711 is merely

cited to show different order of nitridation is known in the art of cited references.

22. Applicants' argument with respect to JP '216 is noted which is substantially same argument as for Izawa. The examiner reiterates the responses as set forth above for Izawa reference.

Conclusion

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The above rejection relies on the reference(s) for all the teachings expressed in the text(s) of the references and/or one of ordinary skill in the metallurgical art would have reasonably understood or implied from the text(s) of the reference(s). To emphasize certain aspect(s) of the prior art, only specific portion(s) of the text(s) have been pointed out. Each reference as a whole should be reviewed in responding to the rejection, since other sections of the same reference and/or various combination of the cited references may be relied on in future rejection(s) in view of amendment(s).

All recited limitations in the instant claims have been meet by the rejections as set forth above.

Applicant is reminded that when amendment and/or revision is required, applicant should therefore specifically point out the support for any amendments made to the disclosure. See 37 C.F.R. § 1.121.

Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Ip whose telephone number is (703) 308-2542. The examiner can normally be reached on Monday to Friday from 5:30 A.M. to 2:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King, can be reached on (703)-308-1146.

The facsimile phone numbers are (703) 872-9310 (non-final Official Paper only), (703) 872-9311 (after-final Official Paper only), and (703) 305-7719 (Unofficial Paper only). When filing a FAX in Technology Center 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.

SIKYIN IP
PRIMARY EXAMINER
ART UNIT 1742

S. Ip
October 19, 2002